under a number of general topic headings.

In the introduction, Professor John Marshall refers to the essential need for real discussion and inter-change of ideas between participants which limits the number of those attending the conference and yet there is no discussion of papers in the published proceedings. There are references at the end of each paper, there is a good author index and a list of contributors. The topic headings include: The Value of Technical Medicine for Diagnosis and Treatment of Cerebro-Vascular Disease, Neuro-Imaging Techniques, Haemorrhage, Stroke in the Young; and a rather odd collection of bed-fellows consisting of Cerebral Infarction, Cerebral Venous Thrombosis, and The Psychiatric Aspect of Cerebral Vascular Disease, all in one section. There is a final section of special contributions largely consisting of surgical and pharmacological innovation, attempting to improve perfusion in the ischaemic brain. Particular attention was given to calcium channel blockers, and phosphodiesterase inhibitors, which may prove to have a clinical application in due course. In the introductory session, it seems that xenon scanning techniques were the most cost-effective way of mapping local CBF values. The suggested application of CT/Xe imaging to brain death certification seems quite superfluous in view of the well established clinical criteria in use in the United Kingdom. PET is clearly likely to be the most revealing but applicable in only very few centres. The improvement of RCBF but no change of RCMRO₂ following ECIC bypass is in accordance with a recently published multi-centre trial which for practical purposes removes the indications for that operation. In view of the recent controversy over the causation of classical migraine it is interesting that there is some PET data to support the vascular rather than the metabolic theory. Blood rheology was reviewed by David Thomas. He suggested, amongst other things, that an HCT in the lower forties is perhaps ideal but sees the need for randomised trials to try and answer the difficult questions on management.

A comparison of intravenous and intra-arterial DSA is made by a Dutch group who find the intravenous technique has considerable potential and have not relegated it to second place, as seems to be the trend in the UK. They do, however, imply that in the current state of the art, the services of a resident engineer are required!

There are some general and specific papers of interest including one by Michael Harrison and colleagues, underlying the

difficulty of drawing conclusions from laboratory work on platelet aggregation. A paper from London, Ontario, discussed the value of cardiac monitoring and echocardiography in TIA and stroke patients. In common with many other people it was found that the more frequently such patients are investigated, the more frequently cardiac abnormalities are identified as being possibly responsible for the cerebral lesion. More work needs to be done in this area before one could confidently predict that it would be a value for-money-exercise, referring large numbers of patients to already heavily over-subscribed cardiac departments for 48-72 hour cardiac monitoring and 2D echo examination.

A paper from Ljungkvist and others from Malmo and Lund, pointed out the value of the relatively cheap continuous wave Doppler system for non-invasive investigation of the carotid bifurcation. They found measurement of spectral width to be the most reliable estimator of stenosis, greater than 35%. A comparison from Oslo of intravenous DSA and pulse Doppler found the Doppler to be superior and many other authors have subsequently published similar data, particularly in terms of cost effectiveness.

In general, this is a book for those involved in active research in the field. Its lack of a detailed index makes it a difficult book to use, although the contents give a useful indication of the subject matter.

JE REES

Brain and Mind. (Psychology in Progress Series.) Edited by David A Oakley. (Pp 251; £15.95 h/back; £6.95 p/back.) London: Methuen & Co Ltd, 1985.

This book addresses the "organic basis of mind" from an evolutionary perspective. The premise upon which the book is based, is that the evolution of the brain (in functional terms) is equivalent to the "emergence of an ability to form internal representations or models of the world, and to use these as a means of controlling behaviour". It is argued further that the contents of this internal world are nothing more nor less than the contents of mind. Unfortunately, this standpoint is taken without consideration of alternative conceptualisations of the nature of mind. While a full discussion of this perennial philosophical chestnut would be beyond the scope of the present book, an introductory overview would have been useful to place the authors standpoint in perspective.

Instead, the introductory chapter is fully within the biological camp, with a review by Jensen, of the phylogenetic aspects of brain development, intelligence and adaptive behaviour, from amphibians to man.

While the adoption of a definition of mind based on internal representations is conceptually narrow, it has the dual advantage of (1) sidestepping many of the insoluble esoteric issues surrounding purely philosophical debates on "mind", and therefore allowing a single argument to be developed and discussed, and (2) consideration of "mind" in animals, a topic which may be excluded at the outset when definitions of mind involve language or some other specifically human, intangible quality.

Two chapters, both by Oakley, consider cognition and imagery in animals, and animal awareness, consciousness and self image. Various strands of evidence are brought together from laboratory studies to ethological observation. A third chapter by O'Keefe is more specific, and presents a speculative model, based on his work with rats, that the septo-hippocampal complex may play a crucial role in consciousness, at least with regard to the physical world. The author admits that a full model needs to encompass both the physical and social world, a topic which is explored in a separate chapter by Oatley.

The final chapter, by Newcombe, reviews the impact of cerebral trauma on consciousness in man. Within the clinical field, a new problem of definition occurs with the term "consciousness" being used to mean anything from "wakefulness" to "self-awareness". Newcombe covers all areas, and draws upon many interesting clinical examples from split-brain patients to blind sight, putting these phenomena into new perspective.

By way of conclusion, I can do little better in recommending this book, than to quote from the publishers own review: "Students of psychology, zoology, anatomy, medicine and philosophy, as well as anyone who has wondered about their own mind and its relation to the brain, will find this a fascinating and stimulating source".

RICHARD BROWN

Case Studies in Neurology for the House Officer. By Stephen L Hauser, Lawrence P Levitt and Howard L Weiner. (Pp 255; £9.00.) London: Williams & Wilkins, 1985.

There seems to be a current vogue in medical teaching to include series of case studies as

an aid in the diagnosis, understanding and management of common disorders. Examiners also support this method. This monograph is designed to help the house officer with common neurological problems.

Fifty two brief case histories are given, some illustrated with an anatomical, radiological or histological clue. After each, there are some questions on diagnosis and management and then the answers. These are followed by brief paragraphs entitled "pearls" and "pitfalls" emphasising important points in relation to each study. There are also a few important references for the topic. Twelve very brief case histories entitled "clinical problems" are given at the end.

This little book contains a wealth of useful information although by its nature it has to be sought out. It makes easy reading and if all the facts given were retained by the readers, they would enlarge their knowledge of neurology. It is produced as a paperback at reasonable cost and clearly type-written. Some of the CT scan pictures, as in study 45, have lost definition. Better use of tables could perhaps have been made in drawing attention to common causes. Not all UK neurologists would believe necessary non-invasive investigation of the carotid arteries and CSF examination in a man of 65 presenting with a single generalised seizure. Botulism is certainly a most rare condition in the United Kingdom. I should also query an incidence figure of 40–50% given for seizures in patients with head injury and loss of consciousness for more than 24 hours.

These are minor criticisms and overall I commend the authors on this study. For those who like to learn in this way, this will prove a useful work, offering much information that is easily assimilated.

T FOWLER

Positron Emission Tomography and Autoradiography: principles and applications for the brain and heart. Edited by Michael E Phelps, John C Mazziotta and Henrich R Schelbert. (Pp 704; \$98.50.) New York: Raven Press, 1985.

This volume fills very adequately a growing need in the field of positron tomography (PET). It takes stock of the work of the last six to eight years, reviews achievements and brings together didactic descriptions of the contributions of the various scientific disciplines which participate in making regional measurements of function *in vivo* in man. To the readers of this journal, suffice it

to say that only three of the 11 chapters are not directly related to the study of the brain. The reader is taken through from physiology to consideration of the principles of measurement of such functions using tracer methods. Receptor assays are also excellently covered. The similarity in principle and mutual support of autoradiography and PET are next dealt with in a technical chapter on the principles of single and multiple radionuclide autoradiography. This, like all the technical chapters is written in understandable, conceptual terms which, though maybe less sophisticated to the professional, conveys all the ideas and a not inconsiderable number of the nuances and limitations of the discipline described. This means that a clinician can get a first hand feeling for the principles of the basic science contributions to successful PET, and also appreciate the respective contributions of each component of the multidisciplinary expertise necessary to bring tracer methods into clinical measurement in practice. It is in this endeavour that the book is most successful, placing PET in the context of scientific and clinical measurement. The book firmly dispels the misconceptions that PET is an imaging modality comparable to the visualisation of structure by other tomographic methods. The idea that one can "see" dysfunction in a manner analogous to seeing a glioma on a CT scan is naive, and the reasons for that become quite obvious on reading this book.

The authors are mostly from the UCLA school which has pioneered many technical and methodological innovations in PET. This homogeneity of purpose gives the book a feeling of coherence and integrity based on experience, which makes it the more enjoyable to read. The review of clinical applications on the brain is exhaustive though a slightly surprising deficiency is the little text spent on studies of neurotransmitter storage and uptake especially in relation to the dopaminergic system. The chapters are all very up to date, with obvious additions of references and text in proof stage to incorporate recent exciting advances such as the measurement of neuroreceptor numbers and affinities in the basal ganglia using the D2 receptor ligand raclopride by the group from the Karolinska. Referencing is generally excellent and illustrations have been drawn from most of the major centres studying cerebral function with PET. Some of the most dramatic illustrations relate to the advances in resolution that have resulted from technical progress in camera design over the last five years.

I would recommend the book to anyone

interested in PET and the measurement of cerebral function in man. It is indispensable to anyone contemplating working directly or indirectly with PET techniques, for an appreciation of the great variety of functions which can be studied, as well as an understanding of practical problems and limitations essential to formulating reasonable clinical research questions amenable to study. The authors have succeeded in making available to a general audience the principles and ideas of what might at first glance be considered an esoteric endeavour. It is in reality an exciting and rapidly advancing multidisciplinary field in neuroscience yielding many opportunities for the investigation of the function of the normal and diseased human brain.

RSJ FRACKOWIAK

The Brain, Biochemistry and Behavior. Proceedings of the Sixth Arnold O Beckman Conference in Clinical Chemistry. Edited by Robert L Habig. (Pp 360; \$48.) Salem: American Association for Clinical Chemistry Non-USA Distributors: Raven Press, New York, 1984.

Most of the 14 chapters cover pharmacological topics in relation to depression, there are also chapters on clinical and endocrine aspects of depression. The chapters are written clearly and as such are accessible to non-specialists. Unfortunately their simplicity is achieved by a selective presentation of evidence in support of the views of several of the authors. There are better books on the subject.

STUART CHECKLEY

Cerebral Blood Flow and Metabolism Measurement. Edited by A Hartmann and S Hoyer. (Pp 640; DM188.00.) Heidelberg: Springer-Verlag, 1985.

This is very much a book for the specialist. Through 600 pages almost 300 contributors with the aid of 320 figures give an exhaustive account of the methodology of measurement of regional cerebral blood flow (rCBF) and metabolism. The book is planned historically, beginning with contributions on the original intra-arterial xenon 133 technique introduced in the 1960s by Lassen and Ingvar. This is succeeded by papers on non-invasive two-dimensional rCBF techniques